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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,404	11/30/2004	Wolfgang Demmer	3568.0100	2829
7590		09/13/2007		
Chernoff Vilhauer McClung & Stenzel 1600 Ods Tower 601SW Second Avenue Portland, OR 97204-3157				
			EXAMINER	
			UNDERDAHL, THANE E	
			ART UNIT	PAPER NUMBER
			1651	
			MAIL DATE	DELIVERY MODE
			09/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/516,404	Applicant(s) DEMME ET AL.	
	Examiner Thane Underdahl	Art Unit 1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 3-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 11-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>1/21/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Restriction Requirement

Applicant's response, with traverse, to the Restriction/Election requirement filed on 7/9/07 is acknowledged. The applicant elected Group II which includes claims 11-14. The Applicant was correct in assuming that the recitation of Group I as claims 1-20 was a typo and that indeed Group I is claims 1-10. Also during the course of examination the Examiner rejoined claims 1 and 2 to the method of Group II.

The Applicant made no further reasons for traversal other than the above mention typo.

Therefore, the Restriction/Election requirement is therefore made FINAL and the elected species and the claims they include will now be examined on the merits. In this case this is claims 1, 2 and 11-14.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. These claims recite the limitation of a membrane product from claims 1-4. However claim 1 in particular is to a membrane itself. It is unclear if the membrane product is the entire membrane made by steps a-e of claim 1 or a product of an abbreviated method of claim 1. Furthermore it is unclear since the membrane of claim 1 is a biologically active membrane and a membrane product may be interpreted as the result of a chemical reaction between a substrate and the membrane of claim 1. Clarification is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2 and 11 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Klein et al. (U.S. Patent # 5766908).

These claims are drawn to a membrane with affinity for biomolecules made by the following steps:

- (a) providing a microporous membrane;
- (b) reacting said membrane of step (a) with a reagent containing a functional group to form a functionalized membrane containing reactive functional groups on the surfaces thereof;
- (c) contacting said functionalized membrane of step (b) with a solution containing an affinity ligand to couple said ligand to said functional group to form a biologically active membrane;
- (d) washing said biologically active membrane with a washing solution containing a volatile organic compound that is miscible with said washing solution; and
- (e) drying said biologically active membrane.

The functional group of step b can be an aldehyde. Claims 11 and 13 are drawn to a membrane product produced by the above method. Claim 13 limits that this membrane product is placed within a filtration housing with a fluid inlet and outlet.

Klein et al. teach a microporous membrane made from hydrogel that is surface modified with an affinity ligand such as a protein, antibody or cell receptor (see Abstract). The microporous membrane is reacted with a functional group such as an aldehyde (col 9, lines 50-60) to bind the affinity ligand to the membrane. The

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membrane is washed with many water miscible and volatile solvents such as acetone (Example 2) and mixtures of water and N-methylpyrrolidone (Example 6) and dried. The membrane is formed into a column that has a defined flow rate which inherently must have an inlet and outlet (Col 12, lines 20-35).

Therefore the reference anticipates claims 1, 2, 11 and 13.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klein et al. as applied above to claims 1, 2, 11 and 13 and in further view of the rationale outlined below.

The description and rejection of claims 1, 2, 11 and 13 are listed in the 35 U.S.C. § 102(b) rejection above. Claim 12 limits that the dried membrane product is stored in a substantially anaerobic atmosphere. The term "substantially anaerobic atmosphere" is very broad and reads on any atmosphere that has a reduced oxygen volume. In accordance with this limitation will read on liquid atmospheres such as water that have a substantially reduced oxygen content in their volume compared to the typical atmosphere found at sea level. Claim 14 limits that the filtration housing from claim 13 contains three membrane products.

Klein et al. does teach that the membranes can be dried and stored in air or they can be stored in a substantially anaerobic atmosphere of a saline/azide solution (col 4, lines 23-26). While Klein et al. does not teach that the dried membranes are stored in an anaerobic atmosphere, this would be obvious to one of ordinary skill in the art by the time the invention was made. Since Klein et al. can store their membranes in atmosphere or in an aqueous solution it would have been obvious to someone skilled in the art to store the membrane in an anaerobic atmosphere. It is implied by the teachings that common storage techniques of placing the membrane in solution or in air have little effect on the performance membrane and one of ordinary skill in the art would recognize that storing the membrane in an anaerobic atmosphere is a very common way to store laboratory membranes, especially those with oxygen reactive functional groups such as aldehydes and enzymes.

Furthermore while Klein et al. does teach a filtration housing that contains one membrane product, they do not teach three membrane products. However M.P.E.P. § 2144.06 states

"It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art."

Therefore it is *prima facie* obvious to one of ordinary skill in the art to add more membrane products that serve the same purpose to the filtration housing.

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Also M.P.E.P. § 2144.04 VI B state:

“that mere duplication of parts has no patentable significance unless a new and unexpected result is produced”

Therefore simply adding more membrane products that serve the same purpose to the filter housing is obvious in the absence of evidence to the contrary.

Therefore the references listed above renders obvious claims 1, 2 and 11-14.

In summary no claims, as written, are allowed for this application.

In response to this office action the applicant should specifically point out the support for any amendments made to the disclosure, including the claims (MPEP 714.02 and 2163.06). Due to the procedure outlined in MPEP § 2163.06 for interpreting claims, it is noted that other art may be applicable under 35 U.S.C. § 102 or 35 U.S.C. § 103(a) once the aforementioned issue(s) is/are addressed.

Applicant is requested to provide a list of all copending U.S. applications that set forth similar subject matter to the present claims. A copy of such copending claims is requested in response to this Office action.

CONTACT INFORMATION

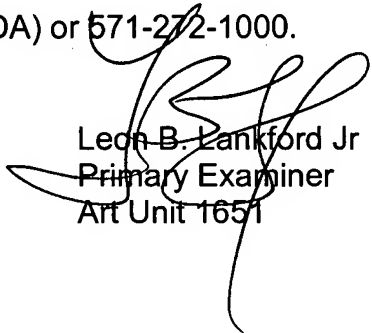
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thane Underdahl whose telephone number is (571) 272-9042. The examiner can normally be reached Monday through Thursday, 8:00 to 17:00 EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached at (571) 272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Thane Underdahl
Art Unit 1651



Leon B. Lankford Jr
Primary Examiner
Art Unit 1651

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Complete if Known

Sheet	1	of	2	Application Number	10/516,404
				Filing Date	November 30, 2004
				First Named Inventor	Demmer et al.
				Art Unit	
				Examiner Name	
				Attorney Docket Number	DES: 3568.0100

U. S. PATENT DOCUMENTS

Examiner Initials	Cite No. ¹	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant, Passages or Relevant Figures Appear
TU		US-5,286,449	02-15-1994	Kuroda et al.	
TU		US-5,766,908	06-16-1998	Klein et al.	
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Examiner Initials	Cite No. ¹	Foreign Patent Document Country Code ³ Number ⁴ Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant, Passages or Relevant Figures Appear	T ⁶
TU		WO 91/03317	03-21-1991	Demmer et al.		<input type="checkbox"/>
TU		EP 0 611 592 A2	08-24-1994	Troth		<input type="checkbox"/>
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Examiner Signature	Date Considered
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹Applicant's unique citation designation number (optional). ²See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.